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*PD en Medio Ambiente y Recursos Marinos*

## THE IMPORTANCE OF PHYTOPLANKTON COMMUNITY COMPOSITION AND ABUNDANCE FOR MARINE AQUACULTURE: A LOCAL STUDY ALONG THE BASQUE COAST.

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Phytoplankton, at the base of marine food webs, is a key component of oceanic and coastal shallow ecosystems. Nevertheless, some phytoplankton species are considered harmful due to its potential ability to form high-biomass blooms and/or produce toxins. These can be accumulated by filter-feeding organisms and get transferred to higher trophic levels posing a threat to human health. Phytoplankton community has long been used as an indicator of ecological quality in the coastal waters of the Basque Country (southeastern Bay of Biscay). A recent interest in aquaculture development makes its study also essential in order to prevent and avoid ecological and public health damages, as well as economic losses. Thus, there is an increasing need of understanding phytoplankton community dynamics. In this research, on the one hand, we analyze an 11-year time series containing data on phytoplankton composition and abundance, and several environmental parameters. The dataset includes 16 nearshore stations and 3 offshore stations along the Basque coast. On the other hand, a complementary study is being carried out at a recently installed pilot-scale bivalve farming in front of Mendexa (Bizkaia). This includes information on phytoplankton community and physico-chemical parameters along the water column, as well as toxin analyses in mussels. Here we present some overall results in regard to the time series. Bloom events were found along the whole area and up to 31 bloom-forming taxa were identified. Potentially toxic species were also registered at all of the sampled stations. Finally, the diatom Pseudo-nitzschia spp., as well as the dinoflagellates Dinophysis spp. and Alexandrium spp., which might be causative of Amnesic, Diarrheic and Paralytic Shellfish Poisoning, respectively, exceeded the abundance limits that imply toxicity risk in several occasions.